

ABSTRACT

This invention provides a circuit and a method for limiting the power consumed by memory array sense amplifiers while enhancing the speed of memory systems. It provides a circuit and a method which automatically limits the precharge time and voltage, which limits the power consumed and speeds the voltage transitions. The invention automatically disables the data line precharge right after achieving the trip point of the first inverter of the sense output circuit. This is the essence of the automatic saving of power consumption. In addition, the circuit and method of this invention provide for faster access speed, since the data line precharge and voltage swing are limited. Also, the circuit and method of this invention allow for smaller integrated circuit layout area due to no required reference circuit and no required circuit for generating the precharge period.